

## **APPARATUS AND METHOD FOR MONITORING SPEAKER CONE DISPLACEMENT IN AN AUDIO SPEAKER**

### **ABSTRACT OF THE DISCLOSURE**

An apparatus for monitoring speaker cone displacement in an audio speaker includes: (a) an  
5 electromagnetic coil structure; (b) a ferrous core structure; the ferrous core structure and the  
electromagnetic coil structure being mounted with the speaker to effect variable electromagnetic  
coupling between the ferrous core structure and the electromagnetic coil structure as the speaker  
cone moves; (c) a signal injecting circuit coupled with the electromagnetic coil structure for  
injecting a predetermined input signal into the electromagnetic coil structure; and (d) a signal  
10 monitoring circuit coupled with the electromagnetic coil structure; the signal monitoring circuit  
receiving an output signal from the electromagnetic coil structure and generating an indicating signal  
based upon the output signal; at least one signal characteristic of the indicating signal being related  
with the cone displacement.